

What is claimed is:

1. An optical element arranged between a planar lighting element and a liquid crystal panel for collecting light that exits from the planar lighting element,  
5 the optical element comprising:

an incidence plane to which the light that exits from the planar lighting element enters; and

a plurality of protrusions provided on a surface facing the incidence plane, wherein substantially all the protrusions are each arranged in a one-to-one  
10 correspondence with an opening of a respective pixel of the liquid crystal panel.

2. The optical element according to claim 1, wherein the planar lighting element includes:

a linear luminous element; and

15 a planar light guiding body introducing the light from the linear luminous element through one end surface thereof and exiting the light from a planar exit plane.

3. The optical element according to claim 2, wherein the protrusion has a  
20 surface which is parallel with the incidence plane.

4. The optical element according to claim 1, wherein the planar lighting

element is an organic electroluminescent element, the protrusion having one of a conical frustum shape and a multiangularly pyramidal frustum shape.

5. The optical element according to claim 4, further comprising:

5 a reflector arranged between the coadjacent protrusions for reflecting substantially all the light reaching between the coadjacent protrusions into the optical element.

6. The optical element according to claim 5, wherein the reflector scatters  
10 the light reaching between the coadjacent protrusions into the optical element.

7. The optical element according to claim 5, wherein the reflector forms a slight irregularity.

15 8. The optical element according to claim 5, wherein the reflector is made of aluminum.

9. The optical element according to claim 8, wherein the aluminum is vapor deposited between the coadjacent protrusions.

20 10. The optical element according to claim 1, wherein the optical element closely contacts the planar lighting element.

11. A planar lighting unit comprising:

an organic electroluminescent element; and

an optical element arranged on a side from which the organic  
5 electroluminescent element exits light, the optical element being arranged  
between the organic electroluminescent element and a liquid crystal panel for  
collecting the light that exits from the organic electroluminescent element, the  
optical element including:

an incidence plane to which the light that exits from the organic  
10 electroluminescent element enters; and

a plurality of protrusions provided on a surface facing the  
incidence plane, wherein substantially all the protrusions are each  
arranged in a one-to-one correspondence with an opening of a pixel of the  
liquid crystal panel, the protrusion having one of a conical frustum shape  
15 and a multiangularly pyramidal frustum.

12. The planar lighting unit according to claim 11, wherein the optical element  
closely contacts the organic electroluminescent element.

20 13. A liquid crystal display unit comprising:

a liquid crystal panel; and

a planar lighting unit arranged away from an observer of the liquid crystal

panel relative to the liquid crystal panel, the planar lighting unit including:

an organic electroluminescent element; and

an optical element arranged on a side from which the organic electroluminescent element exits light, the optical element being arranged between the organic electroluminescent element and the liquid crystal panel for collecting the light that exits from the organic electroluminescent element, the optical element including:

an incidence plane to which the light that exits from the organic electroluminescent element enters; and

a plurality of protrusions provided on a surface facing the incidence plane, wherein substantially all the protrusions are each arranged in a one-to-one correspondence with an opening of a pixel of the liquid crystal panel, the protrusion having one of a conical frustum shape and a multiangularly pyramidal frustum.